

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number  
**WO 2005/078360 A1**

(51) International Patent Classification<sup>7</sup>: **F24J 2/10, 2/24**

(74) Agent: **GRIFFITH HACK**; Level 6, 256 Adelaide Terrace, Perth, Western Australia 6000 (AU).

(21) International Application Number:  
PCT/AU2005/000208

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 17 February 2005 (17.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2004900787 17 February 2004 (17.02.2004) AU  
2004900788 17 February 2004 (17.02.2004) AU  
2004900786 17 February 2004 (17.02.2004) AU

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **SOLAR HEAT AND POWER PTY LTD** [AU/AU]; Level 25, Chifley Tower, 2 Chifley Square, Sydney, New South Wales 2000 (AU).

(72) Inventor; and

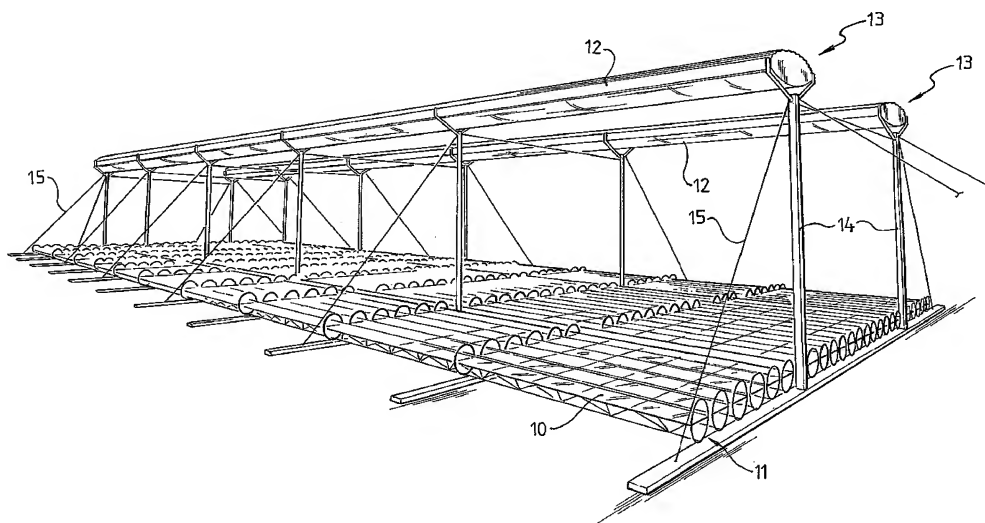
(75) Inventor/Applicant (*for US only*): **LE LIEVRE, Peter** [AU/AU]; 2A Toongarah Road, North Sydney, New South Wales 2060 (AU).

Published:

— with international search report

[Continued on next page]

(54) Title: MULTI-TUBE SOLAR COLLECTOR STRUCTURE



(57) Abstract: A collector system (12) is disclosed that comprises a row of linearly conjoined collector structures (13). The collector system is arranged to be located at a level above a field of reflectors (10) and to receive solar radiation reflected from the reflectors within the field. The collector structure (13) comprises an inverted trough (16) and, located within the trough, a plurality of longitudinally extending absorber tubes (30) that, in use, are arranged to carry a heat exchange fluid. The absorber tubes (30) are supported side-by-side within the trough and each absorber tube has a diameter that is small relative to the aperture of the trough. The ratio of the diameter of each absorber tube to the trough aperture dimension is of the order of 0.01:1.00 to 0.10:1.00 and, thus, the plurality of absorber tubes functions, in the limit, effectively to simulate a flat plate absorber.



WO 2005/078360 A1



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*